

### **REMARKS**

Claims 4 and 5 are pending in the application, neither of which have been amended. Claims 1-3 have been canceled. No new claims have been added.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over **Blossfeldt**, in view of **Marion**, and further in view of **Nakamura**, **Kovarik et al.**, **Kimball** and **Burford et al.**

Applicant respectfully traverses this rejection.

As noted in Applicant's response of August 8, 2008, claim 4 is a more detailed and narrower version of claim 1, where both claims cover the embodiment shown in FIG. 1 of the instant application.

Although **Blossfeldt** discloses serially connected circuit blocks, each containing an LED, the resistors (R1-R4) shown in the FIGURE are connected to the bases of transistor switches T1-T4, respectively, and are therefore not connected in parallel with LEDs 1-4, each of which is connected to the collector of one of transistors T1-T4. This is in contrast to claim 4 of the present invention, which recites this parallel arrangement of the resistor circuit and LED circuit in each serially connected circuit block.

Although **Marion** was cited to teach a second constant current circuit, **Marion** also fails to disclose this specific circuit arrangement described above.

FIG. 1 of **Nakamura** shows each circuit block in series, where a single resistor is arranged in parallel with each LED and a switch 20, 21,...29 switches between one or the other. No constant current circuit employing an active element is shown in FIG. 1, as recited in claim 1 of the instant application. However, FIG. 2 shows constant circuit current 3, but no resistors in parallel with the LED, as recited in claim 4 of the instant application.

Kimball discloses an inverter for powering an electroluminescent lamp having a direct current supply terminal, a ground terminal, and a single output terminal. A high frequency pumping circuit stores electrical energy in an inductor having a first terminal and a second terminal. A switching circuit alternately connects the first and second terminals of the inductor to the output terminal at a low frequency. The output from the inverter is a high voltage, low frequency, alternating current.

Kimball was cited for teaching "that it was well known in the art to provide that the corresponding switching element and the corresponding switching element are controlled to be opened and closed in opposite ways."

Even if it is admitted that Kimball provides such a teaching, no single embodiment of Nakamura provides both the constant current circuit employing an active element and at least two circuit blocks having a resistor circuit and an LED circuit in parallel, as recited in claim 4 of the instant application. It would not be obvious to add the parallel resistor in each block taught in FIG. 1 to each parallel LED/switch block of FIG. 2 because paragraph [0013] discloses that the bypass circuit is "made from resistance of the switches 40 and 0 ohm connected to juxtaposition at it."

Although the Examiner has cited Burford et al. for teaching a constant current circuit employing active elements (transistors), the Examiner has ignored Applicant's argument that FIG. 1 and FIG. 2 of Nakamura show two different examples of the LED drive circuit. FIG. 1 shows an example without the constant current circuit in which the serially connected LED's are each connected in parallel with a resistor, while FIG. 2 shows an example including a "current regulator circuit 3" (constant current circuit) in which the serially connected LED's are each connected in parallel with a switch, and not a resistor, as required in claim 4 of the instant application. The Examiner is improperly using hindsight in combining these two separate examples of Nakamura to arrive at the claimed invention.

It should also be noted that there would be no motivation to use the alternating switches 33, 34 of Kimball to replace each of the switches 20, 21,... of FIG. 1 of

**Nakamura** because each single switch of FIG. 1 of **Nakamura** already provides this alternating (opposite direction) function.

As noted in Applicant's response of August 8, 2008, the Examiner admitted that **Nakamura** fails to teach the constant voltage diode and an output terminal for delivering voltage between the display LED circuit and the constant voltage diode, but has cited **Kovarik et al.** for teaching the feature.

Applicant respectfully disagreed, noting that **Kovarik et al.** discloses a voltage indicator circuit for indicating a charge state of a power supply, such as a battery pack. The voltage indicator circuit includes a voltage divider circuit that connects to a plurality of series connected light sources, such as light emitting diodes. Upon activation of the voltage divider circuit, one or more of the light sources may illuminate to provide a visual indication of the current charge state of the power supply.

As noted above, FIG. 2 of **Nakamura** fails to teach the use of a parallel resistor/LED arrangement for each circuit block in which a constant current circuit employing an active element is used. **Kovarik et al.** and **Kimball** and **Burford et al.** also fail to teach, mention or suggest this particular circuit arrangement.

In the arrangement recited in claim 4, improvement in the power source usage efficiency is achieved, resulting in reduced power consumption and lower costs.

Thus, the 35 U.S.C. § 103(a) rejection should be withdrawn.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as unpatentable over **Blossfeldt** in view of **Marion**, **Nakamura**, **Kovarik et al.** and **Kimball**, and further in view of **Tanaka**.

Applicant respectfully traverses this rejection.

As noted in Applicant's response filed August 8, 2008, **Tanaka** has been cited for teaching that one of the first and the third display LEDs is a green display LED (G), and

the other one is a blue display LED (column 8, lines 26-42; figure 4A) but, like the other cited references including newly-cited **Burford et al.**, fails to teach, mention or suggest the limitations recited in claim 4, from which claim 5 depends.

In the arrangement recited in claim 5, voltage drop may be averaged, and the required power source voltage may be lowered to reduce the load to the drive circuit.

Thus, the 35 U.S.C. § 103(a) rejection should be withdrawn.

On May 13, 2010, Applicant's representative, William L. Brooks, conducted a telephone interview with the Examiner and argued the patentability of the rejected claims.

In the interview, the Examiner acknowledged Applicant's argument that no single embodiment of **Nakamura** provided both the constant current circuit and at least two circuit blocks having a resistor circuit and an LED circuit in parallel, as recited in claims 1, 3 and 4, but he also insisted that Applicant must additionally point out that the constant current circuit employs an active element, as recited in claims 1, 3 and 4, and that it would be improper use of hindsight to combine the two embodiments of **Nakamura**, one without an active element for the constant current source and one with an active element for the constant current source, to arrive at the present invention.

The Examiner suggested that, without further amendment, claims 4 and 5 are probably allowable.

Accordingly, claims 1-3 have been canceled, leaving claims 4 and 5 as the only pending claims, which are in condition for allowance. A Notice of Allowance is, therefore, earnestly solicited.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

Dated: May 26, 2010

Respectfully submitted,

By William L. Brooks

William L. Brooks

Registration No.: 34,129

EDWARDS ANGELL PALMER & DODGE  
LLP

1875 Eye Street, NW

Washington, DC 20006

(202) 478-7376

Attorneys/Agents For Applicant